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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/603,615	06/26/2000	Hee-Jin Lee	Q59502	3396

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EXAMINER


NGUYEN, HANH N

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/603,615	Applicant(s)  LEE, HEE-JIN	
	Examiner Hanh Nguyen	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 10/7/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-17 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-11, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura (US 6,360,287) in view of Lo et al. (US 6,324,178).

Regarding claim 1, Kawamura discloses a system, in which a plurality of electronic apparatuses are connected by a bus, such as the 1394 bus, capable of transmitting isochronous packets and asynchronous packets, which perform communications among those electronic apparatuses. Kawamura mentions in the background of the invention that certain types of data have a small amount of data and do not merit being transmitted in isochronous communications. Kawamura provides for a scheme that provides means for transmitting data having a small amount of data in asynchronous communication. See col. 2, lines 3-16. It can be inferred from this statement that packets of "small" lengths are sent asynchronously, and packets of a length that aren't "small" are sent isochronously (transferring data through the channel by isochronous data transfer service when it is determined that the length of the packet is no less than a predetermined length. . . transferring data by an asynchronous transfer service when it is determined that the length of the packet is less than a predetermined length). Kawamura does not expressly disclose checking the length of the data packet to decide if the packet is small."

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Lo et al. discloses determining the length of a data packet and recording this length value in memory. See col. 8, lines 28-31. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the length checking taught by Lo et al. in the system of Kawamura to determine if packet exceeding a certain length no longer qualified to be "small." One would have been motivated to do this because the system of Kawamura could then determine more accurately whether a packet should be transferred over the isochronous or asynchronous method. Currently, the system does it with less precision, and it could be a waste of efficiency to send certain larger packets over the asynchronous method when they could be more efficiently sent over the isochronous method.

Regarding claim 5, as mentioned previously, the system of Kawamura is designed to work for the IEEE1394 serial bus. See col. 1, lines 10-19.

Regarding claim 2, neither Kawamura nor Lo et al. expressly discloses where the predetermined length is a MTU defined by the TCP/IP protocol. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to set the "small" amount mentioned in Kawamura to the length defined in the TCP/IP protocol. One would have been motivated to do this because the predetermined length is an arbitrarily chosen number which would make the system more efficient in how to allocate between its isochronous and asynchronous channels. If the designer of the system wants all TCP/IP packets to be sent asynchronously when they are transferred over the 1394 bus, then the length must be set at least as high as the maximum length of one of those packets.

Regarding claim 6, as mentioned previously, the system of Kawamura is designed to work for the IEEE1394 serial bus. See col. 1, lines 10-19.

Regarding claim 8, neither Kawamura nor Lo et al. expressly discloses where the length should be $N \cdot XMTU$, where N is a positive number smaller than 1. However, it would have been obvious to set the predetermined length at such a value. Again, one would have been motivated to do this if it would make the allocations between what is sent isochronously and asynchronously more efficient. The setting of the predetermined length is a matter of design choice and will be set according to what types and how much data the system needs to handle.

Regarding claim 10, as mentioned previously, the system of Kawamura is designed to work for the IEEE1394 serial bus. See col. 1, lines 10-19.

Regarding claims 3, 4, 7, 9 and 11, neither Kawamura nor Lo et al. expressly discloses where the checking of the length occurs in the control part of the IP 1394 layer and an ARP layer. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to perform the step of checking for the length of the packet in that control layer in Kawamura. One would have been motivated to do this because performing this step at the data transfer control layer would be better more efficient than having another component of the system perform this step, where this other component would then have to send the information across multiple layers.

Regarding claims 18 and 19, neither Kawamura nor Lo et al. expressly discloses reading an entry in the packet to determine whether it should be sent asynchronously before checking its length. However, it would have been obvious to a first check an entry section to see if the packet has indicated whether or not it should be sent asynchronously. One would have been motivated to do this because if the packet contains this information, then there is no need to waste time on checking the length, and the packet can be directly processed by the most efficient method.

Allowable Subject Matter

Claims 12-17 and 20 are allowed over the prior art.

The following is an examiner's statement of reasons for allowance:

In claim 12, the prior art does not disclose:

(a) determining whether a data packet whose length is a MTU is received from an upper layer to a predetermined node no less than a predetermined number of times for a predetermined time; and

(b) transferring data by an isochronous transfer method when it is determined that the data packet whose length is the MTU is received no less than the predetermined number of times for the predetermined time in the step (a).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed on 10/07/04 have been fully considered but they are not persuasive.

Refer to claim 1, Applicant argues on page 3 of the response that neither Kawamura nor Lo disclose the step of checking whether the length of a packet is no less than a predetermined length.

Response from examiner: Kawamura discloses, in Fig.1, a system capable of transmitting via a bus data having a small amount in asynchronous and data in isochronous modes (col.2, lines 3-16). Even though Kawamura does not explicitly disclose the step of checking whether the length of a packet is no less than a predetermined length. It is strongly suggested in Kawamura that in order to transmit the “data in small amount” in asynchronous mode, the data source 11 (fig.1, col.3, lines 35-40), before generating the small amount of data, perform the step of checking whether the “small data” is “small enough” to be transferred in asynchronous mode. Data which length is larger than the predetermined length should be transferred in isochronous mode.

However, Lo et al. discloses a first computer system comprising nodes 210-218 transmitting packet data to a second computer system comprising nodes 230-236 via IEEE 1394 bus 240 (see fig.2A, col.4, line 47 to col.5, line 10 discloses transmitting packet via a channel). The packet length is determined and stored in memory (col.8, lines 28-31). The method of checking a packet length relative to a predetermined packet length is well known in the art. Depend on a system requirement, one skilled in the art should be able to preset the predetermined packet length corresponding to the amount of small data for transmitting in asynchronous. Therefore, it would have been obvious to one ordinary skilled in the art to implement the feature of determining the packet length taught by Lo et al. into the Kawamura in order to check whether the packet length is no less than the predetermined length, less than the packet length. The benefit is to determine when to transmit the packet in asynchronous mode and isochronous mode based on the step of checking packet length.

In claim 8, Applicant argues that neither Kawamura nor Lo et al. disclose determining whether the length of the packet is no less than $N \times \text{MTU}$, where N is a positive number smaller than 1 and MTU is maximum transfer unit.

Response from examiner, even though neither Kawamura nor Lo et al. expressly disclose the claimed limitation, however, as cited in claim 1 above, presetting a predetermined packet length corresponding to a value of MTU to determine whether a packet is equal, greater or less than the predetermined length is well known in the art. The setting of the predetermined length is a matter of design choice and will be set according to what types and how much data the system needs to handle. Therefore, it would have been obvious to one ordinary skilled to apply the well known features in the combination of Kawamura and Lo et al. to determine whether the packet is no less than $N \times \text{MTU}$ in order to transmit isochronous packets on a channel.

Based upon the above explanations, examiner believes that the rejection of Kawamura in view of Lo et al. overcome the claimed invention.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday-Friday from 8AM to 5PM. The examiner can also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'HNguyen', with a stylized, cursive script.

**HANH NGUYEN
PRIMARY EXAMINER**